

**ABSTRACT**

An ion mobility spectrometer is described having an ion filter in the form of multiple parallel ion channels defined by conductive layers separated by non-conductive layers. A time-varying electric potential applied to the conductive layers allows the filter to selectively admit ion species. The device may be used without a drift gas flow. Microfabrication techniques are described for producing microscale spectrometers, as are various uses of the spectrometer.